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Portable Audio Amplifier and Mixer

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PORTABLE AUDIO AMPLIFIER
AND MIXER

FINAL REPORT

Phase II

April 24, 1989

Submitted by

Joel Huebner

Submitted to

Professor Thomas Laverghetta, EET advisor

Professor R. Ramsey, English W321

INFORMATIVE ABSTRACT

The portable audio amplifier and mixer has a guitar, microphone, and auxiliary input. The guitar signal is first fed into a inverting op-amp that has diodes in its feedback path to produce a distorted sound, if desired. Next the signal goes to an inverting op-amp with an adjustable gain of -10dB to +10dB. The signal is then sent to an active adjustable low-pass filter, bandpass filter, and an high-pass filter for equalization. The guitar signal can then be then combined with a microphone signal by a summing amplifier. Before the microphone signal is combined with the guitar signal, it is amplified by non-inverting op-amps and a differential amplifier with adjustable gain. The guitar and microphone signals are sent to a Bucket Brigade audio signal delay which splits the signal into two channels and delays one channel by 10ms. The stereo output can then be combined with an external stereo signal by means of a summing amplifier. Each stereo signal is then individually amplified by a non-inverting 1 watt audio amplifier. The output signal is then sent to headphone jacks.

PORTABLE AUDIO AMPLIFIER AND MIXER

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